The opinion in support of the decision being entered today was <u>not</u> written
for publication and is <u>not</u> binding precedent of the Board.
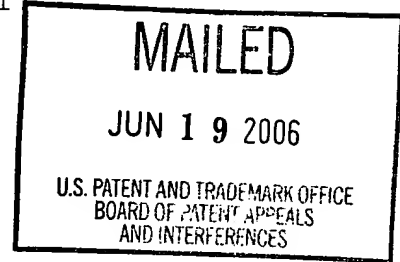
UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCE

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<u>Ex parte</u> PETER HUMMEL, IGOR JACAK and STANISLAV HUTNAN

_____

Appeal No. 2006-0843
Application No. 09/651,031

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ON BRIEF

_____

Before KRASS, SAADAT and MacDONALD, <u>Administrative Patent Judges</u>.
SAADAT, <u>Administrative Patent Judge</u>.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from

the Examiner's final rejection of claims 1-23, which are all of

the claims pending in this application.

We reverse.

BACKGROUND

Appellants' invention relates to computer aided design (CAD)

and finite element analysis (FEA) and integration of these two

-1-

fields into a unified design environment. According to

Appellants, conventional CAD systems are limited in their ability

to define load and support parameters that are used in FEA

calculations (specification, page 2). To expand the

possibilities for defining parameters for an FEA calculation in a

CAD program, Appellants provide for a method in which at least

one graphical function of the CAD program is used to define a

region within a face of a body for which an FEA parameter is to

be entered (specification, page 3).

Representative independent claim 1 is reproduced below:

1. A method for defining at least one parameter for a
finite elements analysis (FEA) calculation in a computer-assisted
drafting (CAD) program, said method comprising:

a) determining a body for which said parameter is to be
defined, said body being an entity processed by said CAD program;
and

b) using at least one graphical function of said CAD program
to define a region within a face of said body, said region being
used to define a load/support condition for said FEA calculation.

The Examiner relies on the following references in rejecting

the claims:

Roth	5,289,567	Feb. 22, 1994
St. Ville	5,594,651	Jan. 14, 1997
Itoh et al. (Itoh)	5,774,124	Jun. 30, 1998

Claims 1-9, 12, 13, 16-18 and 20-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by St. Ville.

Claims 10, 11, 19 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over St. Ville and Roth.

Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over St. Ville and Itoh.

Rather than reiterate the opposing arguments, reference is made to the briefs and answer for the respective positions of Appellants and the Examiner. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the briefs have not been considered (37 CFR §41.37(c)(1)(vii)).

<div align="center">OPINION</div>

The main point of contention is based on whether St. Ville discloses the claimed feature of using at least one graphical feature of the CAD system to define a region within a face of the body that is used to define a load/support condition for the FEA calculation. The Examiner equates regions A-F (depicted in Figure 5A) as the claimed region within a face of the body and concludes that by identifying the forces applied to the object, St. Ville describes the claimed term "to define a load/support condition for FEA calculation" (answer, page 11). To support

this position, the Examiner further relies on the portions (col.
13, lines 55-57 and col. 1, lines 46-49) describing the
relationship between FEA and CAD regarding stress analysis (id.).

Appellants argue that elements A-F depicted in Figure 5A are
points which neither represent regions defined by a CAD program
nor include any definition of a load/support condition for an FEA
calculation (brief, page 7). Appellants further contrast the
finite element model disclosed by St. Ville (col. 10, lines 28-
30) with the claimed method and assert that the load/support
conditions in the reference are defined during FEA steps, not
during the CAD steps (brief, page 8). Appellants add that St.
Ville uses no graphical CAD function for defining the
load/support conditions and instead, relies on forces acting on
points for defining those conditions (id.).

A rejection for anticipation under section 102 requires that
the four corners of a single prior art document describe every
element of the claimed invention, either expressly or inherently,
such that a person of ordinary skill in the art could practice
the invention without undue experimentation. See Atlas Powder
Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947
(Fed. Cir. 1999); In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d
1671, 1673 (Fed. Cir. 1994).

After a review of St. Ville, we agree with Appellants'
assertion that the claimed step of defining a region within a
face of the body used to define a load/support condition for the
FEA calculation is absent in the reference. Identifying the
measurements and responses of the objects after the fields are
applied in St. Ville are performed prior to using the CAD program
(see col. 8, lines 1-44). As argued by Appellants (reply brief,
page 3), while FEA software uses geometric model data generated
by the CAD program (col. 9, lines 1-59), no graphical CAD
function is used to define a load/support condition for the FEA
calculation. In fact, St. Ville specifically discloses that the
finite element model is created (step 23) by a user using an
appropriate software package that operates on the previously
developed geometric models (Figure 3; col. 9, lines 39-47). In
calculating step 24, the FEA calculations are carried out based
on elements defined at step 21 without using any CAD program
(col. 8, lines 23-25 and col. 10, lines 49-55).

Therefore, although the model geometry is generated using
the CAD program, there is no evidence in the reference indicating
that the CAD program is used to define regions which in turn,
define a load/support condition. We note that independent claims
16 and 20 also require program instructions for defining regions

by a CAD program wherein the regions are further used to define a load/support condition for an FEA calculation. As discussed above, St. Ville describes no load/support condition that is defined using a graphical function of a CAD program and therefore, cannot anticipate any of independent claims 1, 16 and 20, nor claims 2-9, 12, 13, 17, 18, 21 and 22 dependent therefrom.

Regarding the 35 U.S.C. § 103 rejection of the remaining claims, we note the Examiner's failure to point to any teachings or suggestions in Roth and Itoh that would have overcome the deficiencies of St. Ville discussed above. Based on our determination that St. Ville does not teach the invention of base claims 1, 16 and 20 and the failure of the other cited references to provide the missing teaching or suggestion, the 35 U.S.C. § 103 rejection of claims 10, 11, 19 and 23 over St. Ville and Roth and of claims 14 and 15 over St. Ville and Itoh cannot be sustained.

CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 1-9, 12, 13, 16-18 and 20-22 under 35 U.S.C. § 102 and claims 10, 11, 14, 15, 19 and 23 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS   )
Administrative Patent Judge   )
)
)
)
MAHSHID D. SAADAT   )   BOARD OF PATENT
Administrative Patent Judge   )   APPEALS
)   AND
)   INTERFERENCES
)
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)
ALLEN R. MacDONALD   )
Administrative Patent Judge   )

MDS/rkw

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